REMARKS

Applicant's attorney gratefully acknowledges the interview granted on February 16, 2010 by Examiner Haugland.

At that interview, it was agreed that the following amendment to claim 4 would overcome the current rejection thereof under 35 USC §102 and would further require at least a modification of the rejection under 35 USC §103 based on the Mori '008 (JP '782) patent:

> A webbing retractor which includes a spool on which a webbing for restraining a vehicle occupant is retracted so as to be taken up and pulled out, a motor, and a clutch which is mechanically interposed between the motor and the spool for transmitting rotation of the motor to the spool so as to rotate the spool in the direction in which the webbing is taken up and disconnecting the transmission of the rotation generated at the spool so as to inhibit the rotation to be transmitted to the rotor, wherein the clutch comprises:
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> a case;
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> a rotating body provided coaxially with the spool, the rotating body rotating when rotation of the motor is transmitted thereto;
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> a slider which is held on the case **through frictional force and thus can move relatively to the rotating body in a predetermined distance**; and
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> a lock bar connected to the rotating body, which lock bar is continuously urged by direct contact with a spring that moves about an axis in a direction in which it engages the spool and is normally held in a disengaged position with the spool by contact with surfaces of the slider, but the axis of which remains fixed relative to the rotating body when the rotating body is rotated in the direction in which the webbing is taken up as the slider remains stationary, such that the lock bar moves apart from the surfaces of the slider and is released from the held state and the direct contact spring immediately moves the lock bar into resilient engagement with the spool,-transmitting the rotation of the rotating body in the direction in which the webbing is taken up to the spool in response to an input from the motor, the lock bar permitting relative rotation between the spool and the rotating body in the direction in which the webbing is taken up, when the rotating body is rotated in a direction in which the webbing is pulled out, the lock bar moving toward the slider and contacting the surfaces of the slider and moving to the disengaged position and being held there by the slider, and
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> the rotating body is supported by the case.

None of the references of record either discloses or suggests the webbing retractor defined in amended claim 1. In the last Office Action, the Examiner equates blocks 146 of the Mori '008 reference with the recited "slider which is held on the case **through frictional force and thus can move relatively to the rotating body in a predetermined distance**; ...."

However, as disclosed in paragraph [0121] of the Mori '008 reference, the blocks 146 (the base portion 142 of the rotating disc 140) are integrally connected to the attachment pieces 172 of the friction ring 170 "by fasteners such as screws or the like." Further, the friction ring 170 does not really apply frictional force, but is only used to limit the rotation of the rotating disc 140 by slidingly contacting the distal end of the braking piece 80. Accordingly, there is no disclosure in this reference of the recited "slider which is held on the case **through frictional force and thus can move relatively to the rotating body in a predetermined distance**; ...." In the last Office Action, the Examiner further equates the recited "lock bar" to the pawls 130 disclosed in Figures 5-7 of the Mori '008 patent publication, and the recited "direct contact spring" to the spring-loaded pushing pieces 154 and pushing portions 166. However, while the pushing pieces 154 and pushing portions 166 are loaded by coil springs 158, these springs do not **directly** contact the pawls 130. Nor do these springs "**immediately** [move] the lock bar into resilient engagement with the spool". Instead, downward movement of the pawls is accomplished by a **camming action** of a corner of the spring-loaded pushing piece 154 sliding against the inclined surface 164 of the pawl 134 (as shown by a comparison of Figures 5 and 6). This is an important distinction, as the recited direct contact spring allows the claimed lock bar to **immediately** move the lock bar into an engagement position with the spool. By contrast, the **camming action** of the corner of the spring-loaded pushing piece 154 used in the Mori '008 sliding against the inclined surface 164 of the pawl 134 is an **inherently slower** operation. Moreover, the pushing pieces 154 do **not** function to move the lock bar into "**resilient** engagement with the spool,...." Instead, when the flat portion of pushing pieces 154 engage the upper flat surfaces of the lock bars 130, they **lock** the lock bars 130 into **fixed engagement** with the spool shaft, as shown in Figures 6 and 7. Finally, the pawls 130 of the Mori '008 reference do not "**[permit] relative rotation between the spool and the rotating body in the direction in which the webbing is taken up**,...." The basis of this limitation resides in the fact that the lock bar 154 of the present invention engages ratchet teeth 136 of ratchet wheel 134 (which is in turn integrally connected to the spool 20) when the belt is taken up and moves to the disengaged position with the ratchet wheel 134 when the belt is pulled out. Furthermore, when the spool 20 is forcibly rotated in the direction in which the webbing is taken up by another pretensioner device, the engagement of the lock bar 154 with the ratchet wheel 134 is released due to the lock bar 154 being flipped up by the ratchet teeth of the ratchet 134, and relative rotation between the spool 20 and the rotating body 124 in the

taking-up direction is allowed (see paragraph [0084]). By contrast, no such relative rotation can occur under such circumstances between the base plate 92 and the spool 20 of the Mori '008 reference. For all of these reasons, amended claim 4 is patentable over the Mori '008 patent.

Amended claim 1 is further patentable over the Fohl '384 patent for at least three reasons. First, while this reference discloses coupling pawls 26, 28 which are in contact with springs 32, these springs bias the tips of the pawls 32 **away from** the coupling wheel 16, as described in column 3, lines 1-6:

> The coupling pawls 26 and 28 are approximately diametrically opposite one another but, as related to the teeth of the coupling wheel 16, are mutually offset by half the pitch. The coupling pawls 26 and 28 are respectively **urged by a strip spring 32,** anchored to the support structure 22a, into a neutral or resting position **in which the pawl tips 26a and, respectively, 28a are at a radial distance from the periphery of the coupling wheel 16**. (Emphasis added.)

Second, in operation, the pawls 26, 28 are pivoted by **inertial forces** into the coupling wheel 16, as described in column 3, lines 57-60:

> When during activation of the belt pretensioner rotary drive 18 the drive disk 22 is accelerated in the direction of the arrow A, the two coupling pawls 26 and 28 are pivoted **by inertial forces** toward the coupling wheel 16.

As was the case with the previously described Mori '008 reference, such a mechanical arrangement results in an **inherently slower** operation than the recited "direct contact" spring which allows the claimed lock bar to **immediately** move the lock bar into an engagement position with the spool. Finally, ultimate engagement of the pawls 26, 28 with the support surfaces 40 on the inner surfaces of the drive disc 22 do **not** function to move the pawls 26, 28 into "**resilient** engagement with the spool,...." Instead, when the flat portions of the pawls 26, 28 engage the support surfaces 40 of the drive disc 22 (as shown in Figures 3-7 and 10), they **lock** the pawls into **fixed engagement** with the coupling wheel 16. Accordingly, amended claim 4 is patentable over the Fohl '384 patent.

Finally, amended claim 4 is patentable over the Schmidt '564 patent as well. All that this reference discloses is a safety belt reeling device having a pawl 28 which is loaded by a

spring 32 having a dead center point and operated via **inertial forces** to disengage from a shaft 24, as described in column 10, lines 19-21 and 39-49 as follows:

> During **normal** operation of the safety-belt reeling device, i.e., without activation of the tightening device, **the hollow shaft 24 is connected with the engaged pivotable pawl 28**..."
>
> * * * * * * * * * *
>
> When in the case of an accident the tightening device is activated and the drive cable 18 is removed from the drive disk 17, the clutch disk 15 with the safety-belt reeling shaft 14 are rotated together due to the engaged tightener coupling (coupling pawl 19, FIG. 5) in the winding direction of the safety-belt. The sudden rotational movement of the clutch disk 15 causes a movement of the pivotable pawl 28 (**due to the resulting centrifugal forces**) in the radial outward direction past the **dead center point** of the spring 32 so that the coupling action between the clutch disk 15 and the hollow shaft 24 is released.

Hence this reference neither discloses nor suggests the recited slider, much less the recited lock bar "which is **continuously** urged by direct contact with a spring in a direction in which it engages the spool" as the force applied to the pawl 28 by the spring 32 varies with the orientation of the spring 32. Moreover, this reference neither discloses nor suggests the functional limitations directed to a lock bar which is continuously urged by direct contact with a spring in a direction in which it engages the spool "**and normally held in a disengaged position** with the spool **by contact with surfaces of the slider**,...." For all of these reasons, amended claim 1 is clearly patentable over the Schmidt '564 patent.

Nor is amended claim 1 rendered obvious by any tenable combination of the Mori '008 reference, the Fohl '384 patent, and the Schmidt '564 patent. The Mori '008 reference, after detailing the shortcomings associated with inertial-controlled clutch mechanisms in paragraphs [0010]-[0015], goes on to state as its primary object in paragraph [0016]

> "...[the provision of] a webbing retractor which generates relative rotation between a prime mover rotating body and a rotating body such as an inertial plate or the like so as to **reliably transmit rotation** of the prime mover rotating body to a driven shaft, such that taking-up of a webbing belt by the driving force of a driving mechanism can be carried out." (Emphasis added.)

This same emphasis on reliability is echoed in paragraph [0232]. To this end, movement of the lock bars 134 illustrated in Figures 5-7 is controlled exclusively **via blocks 146 and pushing pieces 154**. Thus the Mori '008 patent effectively **teaches against** the provision of

inertial-controlled components to move a lock bar or pawl into or out of engagement with a lock wheel. Accordingly, a person of ordinary skill in the art would **not** combine the inertial controlled mechanisms disclosed in the Fohl '384 patent, and the Schmidt '564 patent with the mechanism disclosed in the Mori '008 reference, as such a combination would run contrary to the principal objective of the Mori '008 reference. For all these reasons, amended claim 1 is clearly patentable over any tenable combination of the Mori '008 reference, the Fohl '384 patent, and the Schmidt '564 patent.

Claims 5 and 6 have been cancelled.

Claims 7 and 8 are each patentable at least by reason of their dependence from either claim 4 or claim 5.

Now that all of the claims are believed to be allowable, the prompt issuance of a Notice of Allowability is hereby earnestly solicited.

Respectfully submitted,

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